

CLAIMS

We claim:

1. An improved process for producing ethyl acetate comprising contacting acetic acid and ethanol in a reaction zone in the presence of an acid catalyst, distilling formed vapors and condensing to form an organic phase rich in ethyl acetate and an aqueous phase rich in water, separating the phases and further distilling each phase to obtain a final purified ethyl acetate product and a water stream low in organic components, the improvement comprising:

directing at least a portion of the organic phase from the first distillation to the reaction zone.

2. An improved process for producing ethyl acetate comprising contacting acetic acid and ethanol in a reaction zone in the presence of an acid catalyst, distilling formed vapors and condensing to form an organic phase rich in ethyl acetate and an aqueous phase rich in water, separating the phases and further distilling each phase to obtain a final purified ethyl acetate product and a water stream low in organic components, the improvement comprising:

directing at least a portion of the organic phase from the first distillation to a membrane separation unit which removes water from the organic phase rich in ethyl acetate.

3. The process of claim 2, wherein the membrane separation unit removes water and ethanol from the organic phase.

4. A process for esterification of a carboxylic acid, RCOOH wherein R represents from 1 to 4 carbon atoms, and an alcohol, R'OH wherein R' represents an alkyl radical having from 2 to 5 carbon atoms in a reaction zone in the presence of an acid catalyst, distilling formed vapors and condensing to form an organic phase rich in alkyl acetate and an aqueous phase rich in water, separating the phases and further distilling each phase to obtain a final purified ester product and a water stream low in organic components, the improvement comprising:

directing at least a portion of the organic phase from the first distillation to the reaction zone.

5. A process for esterification of a carboxylic acid, RCOOH wherein R represents from 1 to 4 carbon atoms, and an alcohol, R'OH wherein R' represents an alkyl radical having from 2 to 5 carbon atoms in a reaction zone in the presence of an acid catalyst, distilling formed vapors and condensing to form an organic phase rich in alkyl acetate and an aqueous phase rich in water, separating the phases and further distilling each phase to obtain a final purified ester

product and a water-stream low in organic components, the improvement comprising:

directing at least a portion of the organic phase from the first distillation to a membrane separation unit which removes water from the organic phase rich in alkyl acetate.

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